

**REMARKS**

Claims 8-25 are all the claims pending in the application. By this Amendment, Applicant adds dependent claims 14-25.

Applicant thanks the Examiner for indicating that the drawings filed on February 7, 2006 are accepted. Applicant also thanks the Examiner for considering and initialing the Information Disclosure Statement filed on February 7, 2006.

Although the Examiner indicated that a claim for foreign priority is acknowledged, Applicant makes no such claim in the present application.

**Claim Objections**

Claims 8 and 10 are objected to because of alleged informalities. The Examiner believes that “another device” is required to apply the rules set forth in the portions of claims 8 and 10 regarding the “second processing unit.” See Office Action, Pages 2-3. Applicant respectfully submits that the Examiner’s interpretation is in error. The third feature as recited in claims 8 and 10 is quoted incorrectly, even in abbreviated form. Furthermore, one device could process both rules based on the features as disclosed.

The second and third features to which Examiner objects in claims 8 and 10 describe distinct circumstances and one feature does not make the other impracticable. The second feature describes the situation in which a frame is generated abnormally. When this occurs, the second processing unit blocks output of the emergency stop data. On the other hand, the third feature describes the situation in which abnormal generation of frames continues “for a duration corresponding to a plurality of frames.” According to the third feature, the second processing

unit outputs the emergency-stop data after abnormal generation continues, not the instant a frame is not generated normally.

Applicant respectfully submits that the second feature “to block” does not conflict with the third feature “to output” even though both features relate to abnormal generation of frames. The features as presently written can be understood by one of ordinary skill in the art, and a single unit as described is capable of performing both the blocking function and the outputting function at appropriate times. Furthermore, by way of exemplary embodiments only, Figs. 6 and 10 provide a visual representation of the relationship between the second and third features described above. Therefore Applicant respectfully traverses the objections and requests the Examiner to withdraw the objections to claims 8 and 10 for the reasons stated above.

#### **Claim Rejections - 35 USC § 102**

Claims 8-13 stand rejected under 35 U.S.C. 102(b) as allegedly anticipated by Yamashita (U.S. Patent No. 5,822,615). Applicant respectfully traverses the Examiner’s rejections for at least the following reasons.

Claim 8 recites “a first processing unit configured in the host control apparatus to embed emergency-stop data in a serial-data communication frame to be outputted by the client control apparatus when a malfunction occurs inside the client control apparatus.” Yamashita does not teach, or even suggest, at least this feature in its disclosure.

Yamashita relates to “a control method for a distributed type remote I/O control system enabling size reduction, improvement of the reliability, cost reduction, and improvement of the safety thereof.” Col. 5, lines 2-5. Even if, as the Examiner alleges, the I/O control system communicates by transmitting serial-data communication frames, Yamashita does not disclose

“embed[ding] emergency-stop data in a serial-data communication frame.” Instead, Yamashita discloses bidirectional serial communication that is separate and unrelated to a stop signal.

The first portion of Yamashita cited against the above-referenced feature states that “if the basic system of the NC unit stops its transmission for some reason or other, transmission output from the basic system of the NC unit is stopped according to an instruction from the watch dog circuit...so that a mechanical control signal can be reset when the basic system of the NC unit enters an abnormal state and the system operation is stopped.” Col. 20 line 63 to col. 21, line 5.

According to further description of the “watch dog circuit,” said component “turn[s] OFF transmission output by detecting a period when the MPU does not write transmission data to nor read received data from the communication control section.” Col. 14, lines 19-23. The watch dog circuit appears to operate independently, and there is no indication that the “OFF instruction signal” (see col. 14, line 32) is embedded in communication data. As such, Yamashita does not teach “embed[ding] emergency-stop data in a serial-data communication frame.” Instead, Yamashita teaches a separate component to stop transmission altogether upon the basic system entering an abnormal state.

Furthermore, Yamashita fails to disclose handling of emergency-stop data and frame-error check data in both a host control apparatus and a client control apparatus, as required by claim 8. Instead, Yamashita discloses a CRC comparator “for determining whether any error is included in a receiving frame or not.” Col. 15, lines 42-43. The CRC comparator is contained in the NC unit, which decreases reliability of the stop data, since the remote I/O units do not check the CRC data independent of the CRC comparator. Col. 15, lines 20-63. Thus, Yamashita does not teach, or even suggest, all features of claim 8.

Next, independent claims 9 and 10 recite features similar to, although not necessarily coextensive with, the features argued above with respect to claim 8. Therefore, arguments presented with respect to claim 8 apply with equal force here. For at least substantially analogous exemplary reasons, therefore, independent claims 9 and 10 are patentably distinguishable from Yamashita.

Claims 11-13 are dependent claims, and Applicant respectfully submits that these claims are allowable at least by virtue of their dependency, as well as for additional patentable features set forth therein.

### **New Claims**

Claim 14-25 are added as new claims. These claims are dependent from claims 8-10 and are patentable at least by virtue of their dependency, as well as for additional patentable features set forth therein. These new claims further describe how the emergency-stop data is converted and embedded in serial-data communication. The originally-filed specification supports claims 14-16 at least on page 13, at lines 15-20 of the specification, claims 17-19 at least on page 13, line 21 to page 14, line 8 of the specification, claims 20-22 at least on page 20, lines 16-22 of the specification, and claims 23-25 at least on page 13, at lines 15-20 of the specification.

### **Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880 via EFS payment screen. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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